

REMARKS

Applicants thank the Examiner for total consideration given the present application. Claims 1-4 have been amended and claims 5-8 been added through this Reply. Therefore, claims 1-7 are currently pending. Claims 1 and 5 are independent. Applicants respectfully request reconsideration of the rejected claims in light of the amendment and remarks presented herein, and earnestly seek timely allowance of all pending claims.

ALLOWABLE SUBJECT MATTER

Applicants thank the Examiner for his indication that claims 2-4 contain allowable subject matter. Claim 5 has been written to include all of the limitations of originally presented claims 1 and 2, claim 6 contains all of the limitations of claim 3, and claim 7 contains all of the limitations of claim 4. Accordingly, Applicants submit that claims 5-7 are in condition for allowance and respectfully request allowance thereof.

CLAIM REJECTION UNDER 35 U.S.C. § 103

The Examiner rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,916,638 issued to Schmidt (hereinafter "Schmidt") in view of U.S. Patent No. 3,938,349 issued to Ueno (hereinafter "Ueno"). This rejection is respectfully traversed.

To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Applicants respectfully submit that the Examiner has failed to meet his burden to establish *prima facie* obviousness.

COMPRESSOR

Claim 1 recites, *inter alia*, "a refrigerant flow rate adjuster adjusting refrigerant flow rates in the first liquid heat exchanger, the second liquid heat exchanger and the air heat exchanger." The Examiner asserted that the compressor of Schmidt inherently acts as a refrigerant flow rate adjuster based upon the compressor's operating capacity. Applicants respectfully disagree. Applicants surmise that the Examiner's argument is premised on the physical size limitation of

the compressor can only permit so much refrigerant flowing through the compressor over a given period of time. Thus, the compressor acts as a funnel, insofar a funnel would adjust the rate of flow of a liquid poured into the funnel versus the rate of liquid that would flow out of a funnel.

However, the rate of flow would only change when the rate of flow into the funnel exceeded the maximum rate of flow out of the funnel. If the rate of flow into the funnel is less than the maximum rate of flow out of the funnel, the two rates of flow would be equal and therefore there would be no adjusting of the flow rate. Nevertheless, inherency “may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (internal citation omitted). Accordingly, unless refrigeration circuit is supplying refrigerant to the compressor beyond its operating capacity, the compressor will not adjust the refrigerant flow rate. Therefore, the compressor of Schmidt fails to inherently anticipate the refrigerant flow rate adjuster of the present invention.

CONTROLLER

Additionally, claim 1 recites, *inter alia*, “a controller controlling the refrigerant flow rate adjuster so that the refrigerant flows to the air heat exchanger at a flow rate not lower than a minimum flow rate which prevents stagnation of the refrigerant in the air heat exchanger in a situation where the refrigerant is made to flow to both the first liquid heat exchanger and the air heat exchanger such that the first liquid heat exchanger and the air heat exchanger operate as condensers.” Ueno recites in the portion referenced by the Examiner that “[a]ccording to the invention, the evaporator is made, as aforementioned, to operate in humid conditions at all times regardless of changes in the load, so that the separation of the refrigerant apparatus oil from the refrigerant and stagnation thereof in the evaporator can be prevented.” (column 15, lines 20-25) (emphasis added). To underscore, the Ueno reference is directed to the concern of stagnation of the refrigerant apparatus oil, and not the refrigerant.

Ueno’s refrigerant apparatus, as shown in Fig. 2, takes a portion of low-pressure refrigerant from the inlet of the accumulator 13 (i.e., outlet of the condenser) and heats the

refrigerant by the pilot heat exchanger 7 wherein the temperature of heated refrigerant is directed by the sensor 4a and the degree of opening of the expansion valve 4 is controlled based on the detected signal so that the dryness of the heated refrigerant becomes the appropriate value, whereby the total heat transfer area of the evaporator is effectively utilized and the liquid refrigerant is prevented from being sucked by the compressor. Thus, the above Ueno's description is irrelevant to the feature of the present invention to prevent stagnation of refrigerant in the air heat exchanger as a condenser when the temperature of outside air is low. Accordingly, Ueno fails to teach or suggest the controller as claimed in claim 1.

Furthermore, assuming, *arguendo*, that the teaching of Ueno's refrigerant apparatus oil could be applied to the refrigerant of the present invention, the problem of having the refrigerant stagnate in the air heat exchanger of the present invention is not addressed by the controller in the refrigerator in Ueno. The Ueno controller ensures a continuous feed of refrigerant through the system. The controller 19 in the present invention ensures the refrigerant flows to the air heat exchanger 6 at a flow rate not lower than a minimum flow rate which prevents stagnation of the refrigerant in the air heat exchanger 6 when the first liquid heat exchanger 3 and the air heat exchanger 6 operate as condensers. Consequently, Ueno (and Schmidt) fail to teach or suggest the controller as claimed in claim 1, and therefore the Examiner has failed to meet his burden of establishing *prima facie* obviousness.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact D. Richard Anderson, Reg. No. 40,439 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,



By _____
D. Richard Anderson
Registration No.: 40,439
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant